

CLAIM AMENDMENTS

1 1. (currently amended) A method for performing, for the
2 benefit of a reference provider having a set of users, connectivity
3 evaluations over a data communication network with respect to at
4 least one provider of interest the method comprising the steps of:
5 selecting a plurality of autonomous systems capable of
6 forming a traffic source or a traffic destination for the users of
7 said reference provider through the same reference provider,
8 supplying tables of BGP type containing information on
9 paths available on said data communication network for the routing
10 of said traffic with regard to the autonomous systems of said
11 plurality of systems,
12 extracting from said tables the paths of BGP type
13 inherent to said at least one provider of interest, by finding out
14 the paths that contain the respective number of autonomous system
15 for said at least one provider of interest,
16 extracting for each autonomous system of said plurality
17 of systems, oriented sub-paths between each of said autonomous
18 systems and said at least one provider of interest, by identifying
19 for each sub-path the respective length in number of hops,
20 identifying, for each autonomous system of said plurality
21 of systems, at least one path between [[the]] a forward traffic
22 volume and [[the]] a backward traffic volume with regard to the
23 users of said reference provider,

24 determining, for each of said sub-paths respective
25 connectivity contributions as a function of the respective length
26 in number of hops and of said at least one traffic volume,

27 determining, for each autonomous system of said plurality
28 of systems, the total connectivity values accumulating the
29 connectivity contributions determined for the oriented sub-paths
30 extracted for each of said autonomous systems, and

31 accumulating the total values of connectivity determined
32 for the autonomous systems of said plurality of systems, so as to
33 obtain total connectivity values relating to said at least one
34 provider of interest.

1 2. (previously presented) The method according to claim
2 1 wherein the steps are carried out for a plurality of providers of
3 interest present on said data communication network.

1 3. (currently amended) The method as recited in claim 2
2 further comprising the step of:

3 sorting the values of total connectivity obtained for the
4 providers of interest of said plurality of systems in at least one
5 sorted list.

1 4. (currently amended) The method as recited in claim
2 1, further comprising ~~wherein it comprises~~ the steps of:
3 identifying, for each autonomous system of said plurality
4 of systems, both the forward traffic volume, and the backward
5 traffic volume with regard to the users of said reference provider,
6 and
7 determining, for each of said sub-paths, respective
8 contributions of connectivity as a function of the respective
9 length in number of hops and of both said volumes of forward
10 traffic and backward traffic.

1 5. (currently amended) The method as recited in claim 4
2 further comprising the step of:
3 generating values of total connectivity for said at least
4 one provider of interest disaggregated into values of total
5 connectivity for forward traffic and backward traffic.

1 6. (previously presented) The method as recited in
2 claim 1 further comprising the step of
3 submitting said tables of BGP type to a clean-up
4 operation to eliminate the comments contained in said tables.

7. (canceled)

1 8. (currently amended) The method as recited in claim
2 2, further comprising the step of:
3 selectively reallocating the transit traffic through said
4 reference provider on at least one part of said providers of
5 interest of said plurality of systems.

1 9. (currently amended) A system for performing for the
2 benefit of a reference provider having a set of users connectivity
3 evaluations on a data communication network with respect to at
4 least one provider of interest, the system comprising:

5 tables of BGP type containing information on paths
6 available on said data communication network for the routing of
7 traffic with regard to a plurality of autonomous systems capable of
8 establishing at least one between a source and a destination of
9 traffic for the users of said reference provider through the same
10 reference provider,

11 [[a]] detection module means for detecting, for each
12 autonomous system of said plurality of systems, at least one
13 between [[the]] a forward traffic volume and [[the]] a backward
14 traffic volume with regard to the users of said reference provider,
15 and

16 [[a]] processing module ~~configured~~ means for:
17 extracting from said tables the paths of BGP type
18 inherent to said at least one provider of
19 interest, by searching for the paths that

20 contain the respective number of autonomous
21 system for said at least one provider of
22 interest
23 extracting for each autonomous system of said
24 plurality of systems oriented sub-paths between
25 said each autonomous system and said at least
26 one provider of interest, identifying for each
27 sub-path the respective length in number of
28 hops,
29 determining for each of said sub-paths respective
30 connectivity contributions as a function of the
31 respective length in number of hops and of said
32 at least one traffic volume with regard to the
33 users of said reference provider,
34 determining for each autonomous system of said
35 plurality of systems the total connectivity
36 values accumulating the connectivity
37 contributions determined for the oriented
38 sub-paths extracted for each said autonomous
39 system, and
40 accumulating the total values of connectivity
41 determined for the autonomous systems of said
42 plurality of systems, so as to obtain values of
43 total connectivity relating to said at least
44 one provider of interest.

1 10. (previously presented) The system as recited in
2 claim 9, configured for performing connectivity evaluations for a
3 plurality of providers of interest present on said data
4 communication network.

1 11. (currently amended) The system as recited in claim
2 10, further comprising:

3 ~~a sorting module~~ means for sorting the total
4 connectivity values obtained for the providers of interest of said
5 plurality of systems in at least one sorted list.

1 12. (currently amended) The system as recited in claim
2 9 wherein:

3 said detection module means is configured for detecting
4 for each autonomous system of said plurality of systems, both the
5 forward traffic volume and the backward traffic volume with regard
6 to the users of said reference provider, and

7 said processing module means is configured for
8 determining, for each of said sub-paths, respective connectivity
9 contributions as a function of the respective length in number of
10 hops and of both said forward traffic volume and backward traffic
11 volume.

1 13. (currently amended) The system as recited in claim
2 12 wherein said processing module means is configured for
3 generating total connectivity values for said at least one ISP of
4 interest, disaggregated into total forward connectivity values and
5 total backward connectivity values.

1 14. (currently amended) The system as recited in claim
2 9 further comprising:
3 ~~pre-processing modules to submit said means for~~
4 submitting the tables of BGP type to a cleanup operation to
5 eliminate the comments contained in said tables.

15. (canceled)

1 16. (previously presented) The system as recited in
2 claim 10 wherein the providers of interest of said plurality of
3 systems are equipped with a selective re-balancing module for
4 re-balancing the transit traffic through said reference provider.

1 17. (currently amended) ~~A n-information technology~~
2 ~~product,~~ computer-readable storage medium directly loadable on the
3 internal memory of a digital computing unit and comprising portions
4 of software codes capable of ~~implementing the method according to~~
5 ~~claim 1,~~ when the product is run on a computer of implementing a
6 method comprising the steps of:

7 selecting a plurality of autonomous systems capable of
8 forming a traffic source or a traffic destination for the users of
9 the reference provider through the same reference provider,
10 supplying tables of BGP type containing information on
11 paths available on the data communication network for the routing
12 of the traffic with regard to the autonomous systems of the
13 plurality of systems,
14 extracting from the tables the paths of BGP type inherent
15 to the at least one provider of interest, by finding out the paths
16 that contain the respective number of autonomous system for the at
17 least one provider of interest,
18 extracting for each autonomous system of the plurality of
19 systems, oriented sub-paths between each of the autonomous systems
20 and the at least one provider of interest, by identifying for each
21 sub-path the respective length in number of hops,
22 identifying, for each autonomous system of the plurality
23 of systems, at least one path between a forward traffic volume and
24 a backward traffic volume with regard to the users of the reference
25 provider,
26 determining, for each of the sub-paths respective
27 connectivity contributions as a function of the respective length
28 in number of hops and of the at least one traffic volume,
29 determining, for each autonomous system of the plurality
30 of systems, the total connectivity values accumulating the

31 connectivity contributions determined for the oriented sub-paths
32 extracted for each of the autonomous systems, and
33 accumulating the total values of connectivity determined
34 for the autonomous systems of the plurality of systems, so as to
35 obtain total connectivity values relating to the at least one
36 provider of interest.